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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,891	12/31/2003	Timothy W. Foley	FOT-10002/44	8907
25006	7590	07/13/2007		
GIFFORD, KRASS, SPRINKLE, ANDERSON & CITKOWSKI, P.C			EXAMINER	
PO BOX 7021			JACKSON, BRANDON LEE	
TROY, MI 48007-7021				
			ART UNIT	PAPER NUMBER
			3772	
			MAIL DATE	DELIVERY MODE
			07/13/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/749,891

Applicant(s)

FOLEY, TIMOTHY W.

Examiner

Brandon Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11, 13-19 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) 21-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-19, 25-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed after final, on 5/22/2007, has been entered.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-20 and 25-26 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-11, 13-19, and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kallestad et al. (US Patent 3,943,924) in view of Jones et al. (US Patent 5,746,221) and Daskalon et al. (US Patent 6,533,969). Kallestad discloses a mouthpiece (11) to protect the arch of a user (fig. 5) comprising a U-shaped channel (col. 2, lines 56-63), a force absorbing outer layer (7) with an outer wall, a force absorbing inner layer (5) with an inner wall, a lower wall (fig. 1) connecting the outer wall with the inner wall and covering the occlusal surface (fig. 5) of the teeth in the arch of the user and the inner wall only includes the force absorbing inner and outer layer (5, 7), and a force transmitting layer (9) disposed between the inner layer (5) and outer layer (7). The force transmitting layer (9) is generally planar preformed rectangular strip (fig. 1) and includes an arrangement of fibers of a resinous material (col. 3, lines 45-47) for force to be distributed along, because a force transmitting layer inherently distributes force over the length of the structure. Also, the mouthpiece (11) comprises a palate protective wall (15) extending radially from the inner wall. The force absorbing inner and outer layers (5, 7) are made of dental materials having resilient, moldable, and settable properties (col. 3, lines 39-51). The force absorbing inner layer (5) inherently must have additives that allow it to be rigid at room temperature and moldable at a temperature greater than room temperature (col. 3, lines 39-44).

Kallestad fails to disclose a force transmitting layer transversely across the buccal surface of the teeth. However, Jones teaches a mouthguard comprising a force transmitting layer (17) transversely across the buccal surface of the teeth (fig. 5B). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Kallestad device with the force transmitting layer across the buccal surface of the teeth, as taught by Jones, in order to absorb the energy and spread it across a wider area.

With respect to claims 6 and 16, Kallestad fails to disclose a gas-liberating chemical additive that liberates air bubbles. However, Applicant discloses that various types of chemical foaming agents are known in the art (p. 9, lines 14-16 of specification). Therefore, it would have been obvious to one having ordinary skill in the art to have provided the mouthpiece of Kallestad with an inner layer having a chemical foaming agent, which Applicant admits is well known, to reduce the density of the mouthpiece.

Kallestad fails to disclose that the force transmitting layer includes a plurality of longitudinally extending fibers disposed in a resinous matrix or the material of the fibers and resin. However, Daskalon teaches a dental device comprising a fiber reinforced composite material (22) with a polymeric matrix (col. 7, lines 62-64) including reinforcing fibers (col. 7, lines 62-64). The fibers are made from glass (col. 8, lines 21-25). The composite material may be a resin or polymeric material combined with a fiber material (col. 5, lines 10-13). The resin can be epoxy, acrylic, or polyester (col. 6, lines 37-48). The fibers longitudinally extending (col. 5, lines 52-59). Therefore, it would be obvious

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to one of ordinary skill in the art at the time of the invention to modify the Kallestad device to be made of the materials, as taught by Daskalon, because of the high strength of the materials.

With respect to claims 25-26, Kallestad discloses a mouthpiece (11), wherein said force transmitting layer (9) extends from between the second premolar or bicuspid and the first molar on one side to between the second premolar or bicuspid and the first molar on the opposite side (fig. 5) of the teeth of a human user. The mouthpiece (11) covers the incisal to the cervical portion of human teeth (fig. 2).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon Jackson whose telephone number is (571)272-3414. The examiner can normally be reached on Monday - Friday 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia Bianco can be reached on (571)272-4940. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brandon Jackson  
Examiner  
Art Unit 3772

BLJ

  
PATRICIA BIANCO  
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7/9/07